

REMARKS/ARGUMENTS

Claim 17 to 19, 29, 31 to 33 and 37 to 42 were rejected under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 5,733,498 (Kawakami et al.) in view of U.S. Patent No. 2,796,660 (Irmann). Claims 21 to 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent No. 5,554,338 (Sugihara et al.) Claims 24 to 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent No. 6,551,551 (Gegel et al.) Claims 27 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and GB 1 470 949 (Ford Motor Company, Ltd.) Claims 34 to 36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent 6,890,370 (Merrick et al.)

Reconsideration of the application is respectfully requested.

Rejections under 35 U.S.C. 103(a)

Claims 17 to 19, 29, 31 to 33 and 37 to 42 were rejected under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 5,733,498 (Kawakami et al.) in view of U.S. Patent No. 2,796,660 (Irmann).

Kawakami is directed to a silicon nitride sintered reaction body, and was discussed previously.

Irmann discloses aluminum light metal bodies, made of pure aluminum or aluminum alloys containing other metals. See col. 2, line 51 to 66. Irmann discloses cold and hot pressing and extruding the pure metal material.

Claim 17 recites:

manufacturing a vane segment from the plurality of vanes via powder metallurgy injection molding, the step of manufacturing including the steps of:

mixing a metal powder having a binding agent to form a homogeneous material, the metal powder accounting for at least 50% of the homogeneous material;

forming at least one molded body from the homogeneous material via injection molding, subjecting the at least one molded body to a debinding process, and

compressing the at least one molded body via sintering to form the vane segment.

The present invention this claims *injection molding* using a homogenous material made

of a metal powder and *a binding agent, and the powder comprising at least 50% of the homogeneous mixture.*

Admittedly, Kawakami is directed to sintered silicon nitride bodies that have small amounts of metal.

Irmann is directed to using pure aluminum metal alloys that are not injection molded. See Irmann at col. 3, lines 5 to 14 and the Examples, for example.

Even if the two references could somehow be properly combined (which it is respectfully submitted they cannot), substituting the Irmann homogenous powder as asserted would not result in the claimed invention of claim 17, since no binding agent would be present.

Moreover, the pure metals of Irmann, it is respectfully submitted, are not used for injection molding, and thus one of skill in the art would not have used to the pure metals of Irmann with the injection molding process for silicon nitrides disclosed in Kawakami.

In addition the whole purpose of Kawakami is directed to silicon nitride ceramic bodies, and there is no expectation or reason to have believed that such a process would be useful or useable with pure metals. The sole reason for the proposed modification appears to be improper hindsight. In fact the proposed motivation "known for use in the powder metallurgy process" belies the fact that the claims call for *injection molding*.

Claims 29 and 33 recite parts made from or the method of injection molding with a homogenous material comprising at least 50% of a metal powder.

As argued above, the pure metals of Irmann, it is respectfully submitted, are not used for injection molding, and thus one of skill in the art would not have used to the pure metals of Irmann with the injection molding process for silicon nitrides disclosed in Kawakami.

In addition the whole purpose of Kawakami is directed to silicon nitride ceramic bodies, and there is no expectation or reason to have believed that such a process would be useful or useable with pure metals. The sole reason for the proposed modification appears to be improper hindsight.

Withdrawal of the rejections under 35 U.S.C. §103(a) to claims 17 to 19, 29, 31 to 33 and 37 to 42 thus is respectfully requested.

With further respect to claims 37, 38 and 39, the metal powder does not comprise from 50 to 70% of the homogeneous material, but rather 100 percent.

Claims 21 to 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent No. 5,554,338 (Sugihara et al.)

In view of the above, withdrawal of the rejections under 35 U.S.C. §103(a) to claims 21 to 23 thus is respectfully requested.

With further respect to claim 22, it is respectfully submitted that such a step would not be used with the full metal sintering of Irmann.

Claims 24 to 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent No. 6,551,551 (Gegel et al.)

In view of the above, withdrawal of the rejections under 35 U.S.C. §103(a) to claims 24 to 26 thus is respectfully requested.

Claims 27 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and GB 1 470 949 (Ford Motor Company, Ltd.)

In view of the above, withdrawal of the rejections under 35 U.S.C. §103(a) to claims 27 and 28 thus is respectfully requested.

Claims 34 to 36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kawakami et al. in view of Irmann and U.S. Patent 6,890,370 (Merrick et al.)

In view of the above, withdrawal of the rejections under 35 U.S.C. §103(a) to claims 34 to 36 thus is respectfully requested.

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CONCLUSION


The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully Submitted,

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